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Review of Plant Pathology

A monthly journal compiled from the CAB ABSTRACTS database.
Produced by the DIVISION OF CROP PROTECTION AND GENETICS
in association with the International Mycological Institute

The journal is available at a special rate to subscribers in countries which make a financial contribution to CAB INTERNATIONAL. Orders and enquiries concerning subscriptions and back numbers should be sent to the Distribution Manager, Marketing & Distribution Services, at the above address.

How to use Review of Plant Pathology

● Either BROWSE, using the CONTENTS

Within each issue, records are sequenced according to their principal subject matter – see CONTENTS page.

About three quarters of the records are arranged by CROP, so browsing is particularly useful to crop specialists. Within each crop, records are arranged in the order:

- general
- viruses, mycoplasma-like organisms, spiroplasmas, etc.
- fungi
- bacteria
- non-parasitic disorders.

● Or SEARCH, using the INDEXES

Subject indexes and author indexes are compiled monthly and cumulated annually.

SUBJECT INDEX

This guides the user to all the records that make significant reference to specific topics, including the following:

HOST PLANT SPECIES AND GROUPS

English common names are used for major crops, scientific names for minor crops and other plants. Entries point to pathogen species and then to subject headings. Records that refer only to groups are indexed under group names, e.g. cereals, vegetables.

PATHOGEN SPECIES AND GROUPS

Pathogens are indexed under scientific names. Entries point also to host species and other subject headings. Records that refer only to groups are indexed under group names, e.g. bacteria, fungi.

COUNTRY OR REGION

For records where geographical occurrence is of particular relevance.

AGROCHEMICALS etc.

Including common or chemical names, with cross-references from proprietary names. Including chemical elements with well defined deficiency or toxicity syndromes.

VECTORS

OTHER HEADINGS

The main ones are listed here. Scan the ANNUAL INDEX for a more complete picture.

Acid rain	Economics of control	Phytoalexins	Seed testing
Air pollution	Electron microscopy	Plant extracts	Seed treatment
Air spora	Fertilizers	Postharvest decay	Soil
Apparatus	Heat treatment	Records, geography	Soil treatment
Bibliographies	Host parasite relationships	Records, hosts	Spore dispersal
Biological control	Induced mutations	Regulation	Spore germination
Books	Mineral deficiencies	Reports	Storage decay
Conferences	Molecular genetics	Reviews	Storage disorders
Crop losses	Mycorrhizas	Quarantine	Techniques
Cultural methods	Mycotoxins	Seedborne organisms	*Viruses

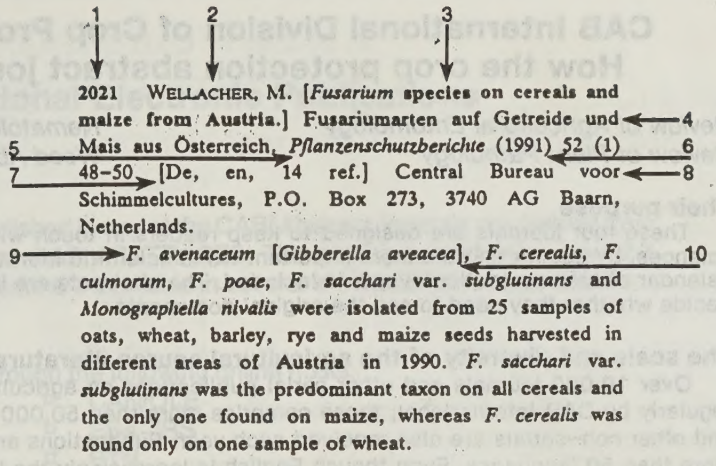
* All relevant records are indexed under viruses, subdivided by virus group name where appropriate. Records are also indexed under hosts and under individual virus names.

AUTHOR INDEX

All authors of each paper are indexed alphabetically by surname. Variants of surnames are also indexed.

A TYPICAL RECORD

1) Abstract No.
2) Author
3) English translation of title
4) Title
5) Journal or other document
6) (Year) Volume (Part) pages
7) Language of text, any other language of summary
8) Address of first author
9) Abstract
10) Preferred name, if the author uses another name. (Names of fungal perfect states are preferred to those of imperfect states.)



The title should be read as an integral part of the abstract.

TO OBTAIN A COPY OF THE ORIGINAL ITEM

Use the CAB International Document Delivery Service. A form is printed in this issue.

LIST OF JOURNALS CITED

The annual indexes include an alphabetical list of all journals cited during the year.

ABBREVIATIONS

A number of easily understood abbreviations are used (e.g. sp., species). Initial letters may be used for a virus after its full name has appeared. The following are also used:

a.e.	acid equivalent	EM	electron microscope	SDS	sodium dodecyl sulfate
a.i.	active ingredient	FW	fresh weight	SEM	scanning electron microscope
c.f.u.	colony-forming units	ID	infective dose		
conc.	concentrated	LC	lethal concentration	str.	strain
concn	concentration(s)	LD	lethal dose	w.p.	wettable powder
DW	dry weight	PAGE	polyacrylamide gel electrophoresis		
ED	effective dose				
ELISA	enzyme-linked immunosorbent assay	RH	relative humidity		
		RPP	*Review of Plant Pathology*		

In abbreviations for languages an initial capital denotes the language of the paper, an initial small letter the language of the summary.

Af	Afrikaans	En	English	Ja	Japanese	Pt	Portuguese
Al	Albanian	Eo	Esperanto	Ko	Korean	Ro	Romanian
Ar	Arabic	Es	Spanish	La	Latin	Ru	Russian
Az	Azerbaijani	Fi	Finnish	Li	Lithuanian	Sh	Serbo-Croat (either script)
Be	Byelorussian (White Russian)	Fr	French	Lv	Latvian	Sk	Slovak
		Gr	Greek	Ma	Macedonian	Sn	Slovene
Bg	Bulgarian	He	Hebrew	My	Malay and Bahasa Malaysia	Sv	Swedish
Ch	Chinese	Hu	Hungarian			Ta	Tajik
Cs	Czech	Ia	Interlingua	Nl	Dutch, Flemish	Tr	Turkish
Da	Danish	In	Indonesian	No	Norwegian	Uk	Ukrainian
De	German	Is	Icelandic	Pe	Persian		
Ee	Estonian	It	Italian	Pl	Polish		

CAB International Division of Crop Protection and Genetics
How the crop protection abstract journals are compiled

Review of Agricultural Entomology
Review of Plant Pathology
Nematological Abstracts
Weed Abstracts

Their purpose

These four journals are designed to keep readers in touch with developments in the crop protection sciences, by abstracting the more important world scientific literature and by publishing review articles. A calendar of crop protection events is included. The abstracts are intended to be full enough for readers to decide whether they need to see the original documents.

The scale and diversity of the agricultural source literature

Over 10,000 journals and other serial publications on agriculture and allied disciplines are received regularly by CAB International; these comprise more than 50,000 documents annually. Over 3000 books and other non-serials are also received each year. Publications are received from some 150 countries, in more than 50 languages. Even though English is increasingly the international language of science, some 40% of the literature is in other languages.

Scanning and abstracting the source literature of crop protection

All these documents are scanned by CABI subject specialists and are available to the CABI Division of Crop Protection and Genetics. About 3000 journals, and numerous new books, are scanned regularly in the Division, whose staff includes specialists in entomology, plant pathology, nematology, weed science, plant genetics, and also linguists.

These specialists identify items within the scope of the four crop protection journals – broadly, scientific documents about agriculturally significant pests (invertebrates, plant pathogens and weeds), beneficial organisms, and relevant crop protection practices and products.

For each item, a record is created consisting of:
- bibliographic information
- an abstract, in English
- subject coding
- index terms.

The CAB ABSTRACTS database

These records are added to the CAB ABSTRACTS bibliographic database. This machine-readable database contains all records published since 1973 in about 50 CABI abstract journals. The total of nearly 3 million records is growing by more than 150,000 new records per year, of which about 21,000 per year are on crop protection. The database is available to users for retrospective retrieval and for maintaining current awareness of literature on defined topics. See separate page, and inside back cover.

The crop protection abstract journals

At intervals, relevant records newly added to the database are selected and become the basis for a new issue of one of the crop protection journals. Records are sorted into a standard sequence within each journal issue, according to subject matter. An author index and a subject index are generated. Cumulative indexes are generated at the end of each year.

Scientific links

Each of the four crop protection journals has its own International Editorial Advisory Board of subject specialists. Their members advise on the content and development of the journals, and commission review articles of topical interest.

The CABI Division of Crop Protection and Genetics maintains close contact with the International Institute of Entomology (IIE), the International Mycological Institute (IMI), the International Institute of Parasitology (IIP) and the International Institute of Biological Control (IIBC). These links are especially important in providing the authority for the preferred names of pest organisms used in the journal indexes. IIBC is responsible for compiling the related abstract journal *Biocontrol News and Information*.

The Division of Crop Protection and Genetics is also in close contact with subject specialists in four other Divisions of the CABI Information Services who compile 45 abstract journals covering the rest of agriculture, forestry and allied disciplines. Comments from users are always welcome. Please write to Mr Geoffrey A. Viney, Division of Crop Protection and Genetics, CAB International, Wallingford, Oxon OX10 8DE, UK.

CAB International Electronic Publications

CAB ABSTRACTS Database

All of the abstracts and citations published in any of the CABI Abstract Journals are derived from a computerised database known as CAB ABSTRACTS. The database, containing over 2.7 million records, and its various subsets are available in several electronic formats, as follows.

Online

- Publicly available worldwide through the following online hosts:
  - DIALOG
  - DIMDI
  - DataStar
  - CAN/OLE
  - ESA-IRS
  - STN

Electronic Journals

- All CABI Abstract Journals on floppy disk, in comma-delimited, Pro-Cite or ISO2709 format.
- Update frequency is the same as for the printed journal.
- Data available on either 3.5" or 5.25" high density diskettes.

CD-ROM (Compact Disc Read Only Memory)

CABCD

- Three volumes containing the entire CAB ABSTRACTS database since 1984.

CAB SPECTRUM

- An array of subject-specific CD-ROMs.
- **VETCD** – 20 years of information on Veterinary Science and Animal Health.
- **BEASTCD** – 20 years of information on Animal Production and Dairy Technology.
- **TREECD** – 50 years of information on Forestry, Agroforestry & Forest Products.
- **CABPESTCD** – 20 years of information on Crop Protection.
- **SOILCD** – 20 years of information on Soils, Water and Land Management.
- **HORTCD** – 20 years of information on Horticulture, Ornamental Horticulture and Plantation Crops.

CAB COLLECTION

- **PolTox III:CAB** –Environmental pollution and toxicology information since 1983.
- **Human Nutrition on CD-ROM** – 10 years of data from CAB ABSTRACTS, FSTA, Medline and the Life Sciences Collection.

Current Awareness

SDI Service

- Based on the most recent input to the CAB ABSTRACTS database.
- Subscribers decide their own search profile.
- Monthly search results on computer printout or floppy disk.
- Full bibliographic details and informative abstracts for the records retrieved.

CAB Alerts

- Similar to the SDI service, but with titles and search strategies chosen by CABI staff.
- Monthly output is provided on computer printout.

Retrospective Searches

- An online retrospective search of the CAB ABSTRACTS database.
- Provides citations and abstracts to published papers in the subject area of choice.
- Search output is available on computer printout or floppy disk.

For more details of these, or any other CABI Electronic Publications, contact the Marketing Manager for Electronic Publications, CAB International, Wallingford, Oxon OX10 8DE, UK.

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Computing & Library Services:	P. M. Kirk, PhD
Administrative & Training Services:	E. M. Aitchison, MA

The International Mycological Institute (IMI), with a staff of about 65 and an annual budget of £1.9m, is the largest centre concerned with systematic mycology in the world. Founded in 1920, the Institute has from the first provided world services to mycologists and workers in related disciplines, particularly plant pathology, medical and veterinary mycology, and now also in industrial mycology, biodeterioration, biodiversity and biotechnology.

Biosystematic & Identification Services

Correct diagnosis of the cause of a disease, spoilage, or industrial problem is the first step in finding an appropriate solution. IMI provides a reliable, up-to-date identification service for about 4500 cultures and specimens each year, received from a wide variety of sources.

Staff are involved in wide-ranging research programmes on microfungal systematics. They produce about 70 scientific papers each year and also compile the *Dictionary of the Fungi, Index of Fungi, Bibliography of Systematic Mycology, Systema Ascomycetum, Descriptions of Fungi and Bacteria, Distribution Maps of Plant Diseases, Mycological Papers* and *Phytopathological Papers*.

Information on the submission of material and details of charges are available on request.

Genetic Resources Reference Collection

This Collection, which incorporates the UK National Collection of Fungus Cultures, maintains over 17,000 strains; it is one of the largest service collections for fungus cultures in the world. Plant bacteria and yeasts are also maintained.

Cultures are available for sale world-wide for industrial, scientific and educational use, and metabolic and physiological data on the strains held are actively added to the collection's databank.

The 10th edition of the Catalogue is available free of charge and lists over 11,000 strains available from the open collection. Additions to the collection are welcome, especially of fungi otherwise not represented in the collection or of biochemical, economic and industrial importance.

The Collection is recognized as an International Depositary Authority for patent strains of fungi and bacteria under the terms of the Budapest Treaty.

Training Services

IMI offers a wide variety of training activities, ranging from postgraduate research degrees to one-day specialist seminars. Each year about eight longer courses, including an annual six-week International Course on the Identification of Fungi of Agricultural Importance, are held.

Overseas workshops, individual training and tuition for mycologists, plant pathologists and industrial staff are also arranged. Visiting research scientists are welcome to spend time at the Institute as part of their research work.

Plant Protection Services

The Institute's Plant Protection Laboratory incorporates the UK Overseas Development Administration Plant Pathology Liaison Unit. Backed by the expertise and information available within IMI, it provides disease diagnosis, technical support, and consultancy services for agricultural scientists, advisers, growers and shippers worldwide. Research is also undertaken, primarily on specific problems relating to pathogen variability and characterization.

Consultancy & Contract Services

IMI is able to undertake consultancy assignments involving surveys of disease or other problems, and offers consultancy and contract research in any of its fields of activity. Staff can also assist in the preparation of mycological publications on a contract basis.

Industrial & Environmental Laboratory

The laboratory is accredited under the UK National Measurement Accreditation Service (NAMAS) and carries out a wide variety of industrial testing, contract research and consultancies involving non-food materials. Services involving organisms other than fungi can also be arranged, and a tropical testing facility is available.

Yeast Investigations Laboratory

A specialist laboratory, headed by Professor R. R. Davenport, has been established in IMI. It provides consultancy, investigatory contract research and training facilities related to specific needs of the food and beverage industries, both in the UK and overseas.

Food Investigation

IMI's long-standing involvement in the food industry is now focussed through its Food Group, covering filamentous fungi, yeasts and bacteria. We offer producers, processors, manufacturers and distributors a comprehensive, confidential, microbiological service, including on-site investigations and training. For information resources, IMI has access to the International Food Information Service (IFIS).

Biochemistry & Molecular Biology Services

The Biochemistry & Molecular Biology Laboratory acts as a service unit within the Institute for routine and project work. Techniques currently available include detection and screening of fungal enzymes and secondary metabolites (including mycotoxins) and a number of methods for characterizing strains and taxa at a molecular level.

Bacteriology Laboratory

The laboratory offers a specialist identification service for plant pathogenic, biocontrol and industrially significant bacteria. Techniques currently available include quantitative fatty acid analysis, physiological test methods and molecular techniques involving the polymerase chain reaction (PCR).

Information

The IMI library holds a unique collection of literature on plant pathology, fungal systematics, medical and veterinary mycology, biodeterioration and fungal biotechnology. Its stocks consist of approximately 750 current journals, 7,000 volumes and books and 140,000 reprints.

Literature searches and studies can be carried out to specific individual requirements, and a photocopy service is also available to provide copies of original source literature.

Further details

Please write, fax or telephone for our current Services and Publications booklet and any further information on specific services that you may require. All work is carried out by IMI on a confidential basis, and we will be pleased to discuss your individual requirements without obligation.

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Carrots	47	114	177	249	330	432	525	614	701	787	879	979
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Cassava	48	114	177	249	330	–	–	–	701	787	879	979
Sweet potatoes	48	114	177	250	330	432	525	614	701	788	879	979
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Other root crops	48	–	177	–	–	–	525	614	–	788	880	979
LEAFY VEGETABLES, BULBOUS VEGETABLES, STEM VEGETABLES	49	115	177	250	330	432	526	615	702	788	880	979
Allium	49	115	–	250	330	432	526	615	702	788	880	980
Brassica	49	115	177	250	331	433	526	615	703	788	880	980
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Capsicum	51	118	179	253	336	437	532	619	707	793	885	988
Cucurbitaceae	51	119	180	254	336	437	532	620	709	794	885	989
Other fruit vegetables	52	–	181	255	–	–	–	623	710	796	887	991
TEMPERATE FRUITS	52	120	181	255	338	441	534	623	710	796	887	992
Pome fruits	53	120	181	255	339	441	534	623	710	797	888	992
Stone fruits	53	122	182	257	343	443	535	624	712	799	890	993
Small fruits	54	123	183	258	343	445	536	626	712	800	891	994
Grapes	55	123	183	259	344	445	537	627	713	801	893	994
Other temperate fruits	56	–	184	260	346	446	538	627	716	802	894	995
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Mangoes	58	125	185	262	348	448	541	629	718	805	896	997
Pineapples	58	–	–	–	349	–	541	–	–	–	–	–
Litchi	–	–	–	–	349	448	–	–	–	–	–	–
Other tropical and subtropical fruits	59	125	185	262	350	448	541	630	718	805	896	997
NUT CROPS	59	126	186	263	351	449	542	631	719	806	897	998
FATTY OIL PLANTS	59	126	186	264	351	449	542	631	720	807	898	999
Rape	59	126	186	264	351	449	542	631	720	807	898	999
Sinapis	–	–	–	–	–	–	–	–	–	–	–	–
Linseed	–	–	–	265	352	449	–	632	721	–	–	999
Sunflowers	60	127	187	265	352	450	543	632	721	807	898	999
Safflower	–	–	187	266	353	–	544	632	–	–	898	–
Oil palms	–	127	–	266	353	–	544	632	721	808	–	–
Coconuts	60	127	187	267	353	–	–	632	–	808	899	1000
Olives	–	–	–	–	–	450	544	–	721	808	899	–
Groundnuts	61	127	188	267	354	450	544	632	722	808	899	1000
Castor beans	61	–	–	268	–	–	545	633	–	–	–	–
Sesame	–	128	–	268	–	–	–	633	723	809	901	1002
Other fatty oil plants	–	–	–	–	–	–	–	–	–	–	901	–
SUGAR CROPS	61	128	188	268	355	451	545	633	723	810	901	1003
Sugarcane	61	128	188	268	355	451	545	633	723	810	901	1003
Sugarbeet	61	129	189	268	356	452	545	634	723	811	902	1003
Other sugar crops	–	–	–	–	–	–	–	–	–	–	–	–

(Note: under each crop, abstracts are arranged in the order: general; viruses, mycoplasma-like organisms, spiroplasmas, etc.; fungi; bacteria, non-parasitic disorders.)